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WRITING SYSTEMS--LANGUAGE CURRICULUM II, TEACHER VERSION.

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A WRITING SYSTEMS GUIDE WAS PREPARED FOR TEACHING IN THE EIGHTH-GRADE LANGUAGE CURRICULUM. THE GUIDE FOR TEACHERS CONTAINS BACKGROUND INFORMATION STRESSING THE DISTINCTION BETWEEN WRITING AND SPEECH, ORIGINS OF WRITING, AND THE GREEK ALPHABET AS THE SOURCE OF ALL WESTERN ALPHABETS. SUGGESTED METHODS FOR TEACHING THE WRITING SYSTEMS UNIT WERE DISCUSSED. APPROPRIATE STUDENT EXERCISES WERE DISCUSSED WITH ANSWERS FOR EXERCISES IN A STUDY GUIDE PREPARED FOR STUDENTS (ED 010 157). AN ANNOTATED BIBLIOGRAPHY ON THE HISTORY AND APPLICATIONS OF WRITING WAS ALSO INCLUDED. (WN)

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OREGON CURRICULUM STUDY CENTER

WRITING SYSTEMS

Language Curriculum II
Teacher Version

The project reported herein was supported through the Cooperative Research Program of the Office of Education, U. S. Department of Health, Education and Welfare.

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WRITING SYSTEMS

Teacher Version

I. Introduction to the Teacher

The art of writing ranks with the most important of man's inventions, yet the history of writing is a subject rarely studied in school. The causes for this negligence are not difficult to imagine. Living in a land where the ability to read and write is nearly universal, we sometimes lose sight of the fact that half of mankind is illiterate. Some persons might even express surprise at the fact that many languages (both ancient and modern) have never been written. And, since we are daily involved with reading and writing, many tend to think of a writing system and a language as being inseparable --even confuse writing with spoken sounds. When such confusion occurs, language becomes just a matter of spelling and writing, and spoken sounds are thought of as being "what a letter says." To avoid the obvious misconceptions which can arise from a confusion between writing and speech, the origins and development of writing systems, especially the English alphabet, should be introduced fairly early in the study of language.

Of first importance, then, is the distinction between writing and speech. There is little doubt that human speech was in existence for hundreds of thousands of years before the art of writing was invented. This fact leads to an important conclusion: that because speech is much older--came first in human development--writing is an attempt to represent speech. Writing has been defined, in fact, as "the graphic counterpart of speech." That such definitions adequately explain our own alphabetic writing system is obvious, but in order to include non-phonetic writing systems, our definition must be broadened. For example, writing could be defined as "the conveyance of ideas or sounds by marks on some suitable medium ranging from stone to wood, clay, metal, leather, linen, parchment, paper and wax"[1] Such a definition would include picture writing in which crude pictures were used to communicate simple stories or ideas. In other words, the written symbols communicate ideas visually in the same systematic way that spoken symbols (speech sounds) communicated ideas by auditory means. Thus we see that an alphabetic system of writing, in which symbols stand for spoken sounds, is simply a visual representation of speech itself.

Failure to appreciate the significance of the preceding definitions can lead to serious misconceptions about speaking, writing, and reading. Early scholars often stated or implied that speech is a degenerate form of language and is inferior to writing. Some people, in offering reasons against spelling reform, reveal a confusion between written symbol and spoken sound. Children who are learning to read often make statements which indicate that they believe they are learning "the language" for the first time. What these children fail to recognize is that the visual symbols on the page are simply graphic representations of the auditory language signals which they already

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1 David Diringer, Writing (New Yrok, 1962), p. 20.

have learned. Learning to read these symbols involves "the process of transfer from the auditory signs for language signals, which the child has already learned, to new visual signs for the same signals"[2] The common "spelling pronunciations" of such words as often, raspberry, and Christmas are other manifestations of the belief that sounds are subordinate to and determined by letters.

It is the purpose of this unit to give a brief summary of the history of writing, both its origins and its development. In so doing, it is essential that the pupil be made aware of the fact that many of the fanciful versions of the history of writing found in some juvenile books are based not upon fact but upon imaginative interpretations of a few facts. The exact relationships between most early writing systems are still in doubt, and only additional discoveries will verify or refute the many hypotheses put forward. Another purpose of this unit is to trace the development of the English alphabet and, in so doing, develop a sound understanding of the alphabetic principle. Until the pupil grasps the basic idea underlying English writing (i. e., representing a single distinctive sound by a single unvarying symbol), his understanding of language is incomplete.

II. Origins of Writing

The earliest complete writing system now known to modern scholars was in existence by the middle of the fourth millennium B. C. Early cave drawings, for example, are not considered to be complete systems of writing; furthermore, no evidence exists which connects these early markings with the ancient systems of writing which are now known. This early "embryo-writing" does deserve discussion, however, since both embryo-writing and real writing probably arose out of man's inborn need to communicate and express. The painting and engraving of primitive peoples, which may have originated in magic ceremonies, consist mainly of conventionalized drawings of men and animals and various geometric patterns. Since these disconnected and arbitrary images (some dating back to 20, 000 B. C.) do not convey even the simplest ideas, they do not fit the definitions of writing given above. The main difference between embryo-writing and true writing is that the former is not systematic, as it would have to be to represent the ordered system that we call language.

Although technically not writing, another primitive method of communication deserves mention--namely, memory-aid devices. The Peruvian quipus are among the most familiar of such contrivances. Ancient Peruvians (who used no writing, as far as is known) encoded messages and records into a number of variously-colored cords by tying knots in them. Only those who were familiar with the current code could decipher the messages contained in the knots. Other mnemonic devices used by primitive peoples include shell and bead strings (e. g.,

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[2]Charles C. Fries, Linguistics and Reading (New York , 1962), p. 120.

Iroquois wampum belts), notched sticks, and tokens having special significance. But, like all such inventions, they do not constitute a writing system and they do not approach the efficiency and versatility of true writing.

In early civilizations, the invention of writing was usually attributed to one of the gods. Several modern authors have given us fanciful accounts of how ancient cave drawings developed into complex writing systems. But we cannot be satisfied with such explanations. Since there is no evidence which connects the oldest known writing systems with primitive inscriptions, we must face the fact that the origins of true writing, like those of language, are uncertain.

Types of scripts. In order to make it easier to discuss early systems of writing, we will need some sort of classification. David Diringer has classified scripts according to their nature and according to the stage of development attained.[3] These scripts are: (1) picture writing, (2) ideographic writing, (3) analytic transitional scripts, (4) phonetic scripts, and (5) alphabetic writing. Picture writing is distinguished from embryo-writing by the fact that, of the two, only the former is capable of conveying an action or an idea in a systematic sequence of representational pictures. In picture writing, there is no connection between the pictograms and the spoken language of the writer, since the pictures do not stand for sounds but for the objects or actions themselves.

Ideographic writing resembles picture writing but differs in that ideograms represent not only the objects and actions themselves but may suggest also some of the ideas associated with the objects or actions. A picture representing a bowl could also suggest related concepts such as food or the act of eating. A drawing of the sun could also stand for such things as light, heat, a sun god, or day. Analytic transitional scripts (e.g., Egyptian hieroglyphic and Sumerian cuneiform) are a combination of ideographic and phonetic signs.

Phonetic scripts are those which represent actual speech. Each symbol in a phonetic script stands for a sound (or sounds) in the language of the writer. In syllabic writing, which is one type of phonetic script, each symbol stands for a syllable (i.e., a vowel sound and one or more consonant sounds spoken together) in the language being written. Alphabetic writing, which is the most useful system of writing ever developed, is a phonetic script in which each symbol (a letter) represents a single distinctive sound. Since the total number of symbols needed in alphabetic writing is smaller than that needed in the other types of scripts, the advantages of the former are evident. Alphabetic writing has become so widespread and important that it is now used by nearly all the civilized peoples of the earth, Chinese and Japanese scripts being notable exceptions.

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[3] Diringer, pp. 21-25.

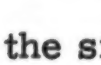
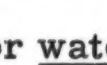
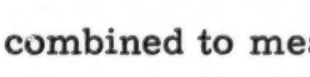
III. Early Systems of Writing

Only in the last century and a half has modern man gained the knowledge necessary to read the scripts of ancient Mesopotamia (present-day Syria and Iraq) and ancient Egypt. In 1800 neither script had been deciphered; today scholars can read both the Sumerian cuneiform and Egyptian hieroglyphic writing, as well as several other ancient scripts. A brief description of the earliest known writing systems will provide a rough outline of what is known about the origins and development of the art of writing.

Cuneiform script. The oldest script known to modern scholars is the cuneiform writing of ancient Mesopotamia and surrounding countries. The name cuneiform has its roots in the Latin words cuneus, "wedge," and forma, "shape." Although the earliest forms of the script were pictographic, cuneiform is classified as an analytic transitional script, since the writing system which finally emerged contains a combination of ideographic and phonetic elements. The first people known to have used this script are the Sumerians, who settled in the Tigris-Euphrates Valley in approximately 3500 B. C. Some of the clay tablets containing cuneiform writing date back to about 3200 B. C; the pictographic script out of which the cuneiform developed belongs to an even earlier time. Cuneiform script was written from left to right with a stylus (i. e., a pointed instrument) which was pressed into the soft clay tablets to form short, straight, wedge-shaped marks in vertical, horizontal, or oblique position. The following chart illustrates both forms of the script:

(See chart, adapted from David Diringer's Writing, New York, 1962, published by Fredrick A. Praeger, Inc., Figure 7, "Development of cuneiform symbols from pictographs to Classic Assyrian," page 38.)

A further complexity in the cuneiform script was the use of determinatives, a class of signs placed before or after words to indicate the category to which a word belonged or to indicate which phonetic value was intended. Also, composite characters were utilized to

reduce the total number of signs. For example, in later cuneiform the sign for <u>water</u> () and that for <u>heaven</u> () were combined to mean <u>rain</u> ().

During the third millennium B. C., other peoples living in the Tigris-Euphrates Valley, the Babylonians and Assyrians in particular, borrowed the cuneiform script. Spread of the script continued into the second millennium B. C. when numerous other tribes borrowed the script and adapted it to their own languages. The Persians, who adapted the script (probably in the sixth century B. C.) to their Indo-European language, made a great many simplifications in creating a syllabic writing system of forty-one signs. The use of cuneiform writing continued into the first century A. D.

As might be expected, the Persian adaptation of the cuneiform script was deciphered first. A succession of scholars worked at deciphering the script in the early nineteenth century and succeeded in identifying about three-fourths of the symbols. However, it was an Englishman, Henry C. Rawlinson, who finally solved the puzzle of the Persian and Babylonian cuneiform and published the results in 1846. Later discoveries of Babylonian, Assyrian, and Sumerian writings have opened up to scholars the early history of the Near East.

<u>Egyptian hieroglyphics</u>. Another important transitional script of the Near East is the writing system of the ancient Egyptians, a script called by the Greeks <u>hieroglyphika grammata</u>, "sacred carved letters." Scholars date the earliest extant Egyptian inscriptions at approximately 2900 or 3000 B. C. (The origins of both cuneiform and hieroglyphic writing are uncertain, but it would appear that the former is the more ancient script.) Egyptian writing of the earliest inscriptions is also a transitional script--that is, it contains both ideographic and phonetic signs. Like cuneiform, it probably developed from a pictographic script.

Contrary to popular belief the Egyptian hieroglyphic writing did not develop into an alphabetic script. Among the phonetic elements in the script were signs which stood for single consonant sounds, vowel sounds not being written at all. But the way in which these twenty-four signs were used in the writing system indicates that the Egyptians were far from an application of the alphabetic principle. The writing of Egyptian hieroglyphics, even in the two cursive scripts which developed from it, remained an unwieldy system which never approached the efficiency of alphabetic writing. The basis of the script (i. e., the use of ideograms, phonograms, and determinatives) never changed throughout its existence.

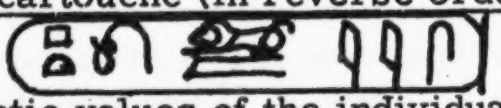
The ancient Egyptians wrote their script on wood and papyrus as well as on stone. For use in everyday affairs and some sacred matters, another script called hieratic was developed. The pictorial nature of the hieroglyphics was obscured in this new cursive script, but it was simply a transcription of the original symbols. A later script, often compared to our modern shorthand system, was derived out of the hieratic script. This modified form of cursive writing was called

demotic and, like its predecessors, contained ideograms, phonograms, and determinatives. After the introduction of Greek writing and language into Egypt by the Ptolemies (fourth century B. C.), official decrees were often written in three scripts (hieroglyphic, demotic, and Greek) and two languages (Egyptian and Greek), a fact which proved to be very important to modern scholars. The last extant inscription in hieroglyphic writing is dated at 394 A. D; the last demotic inscription is from 476 A. D.

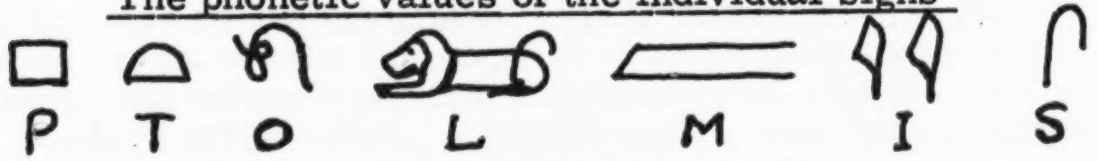
Until the nineteenth century, knowledge of the ancient Egyptian writing was lost to modern man. A lucky discovery by one of Napoleon's soldiers in Egypt helped to restore this knowledge, for he uncovered one of the bilingual decrees mentioned above, thus giving scholars the key they needed to unlock the mystery of hieroglyphic script. This small slab of basalt, now called the Rosetta Stone and housed in the British Museum, contained a decree commemorating an event which occurred in 196 B. C. during the reign of Ptolemy V Epiphanes. With the aid of the Greek message, scholars began work on deciphering the hieroglyphic and demotic sections of the stone. Jean Francois Champollion, a Frenchman, finally published the major decipherment in 1822.

A brief illustration of the hieroglyphic script will serve to indicate the difficulties faced by the scholars. The script was usually written in vertical columns or horizontal lines, the latter being read from right to left. Champollion made the discovery that the Greek names in the inscription (e. g., Ptolemaios) were phonetically expressed, thus giving him the phonetic values of several signs. One of the groups of signs enclosed within an oval ring was repeated several times in the inscription. The group of signs and its eventual phonetic values are shown below:

The cartouche (in reverse order)



The phonetic values of the individual signs



Working from the values of the signs which he knew, Champollion eventually solved the riddle of the ancient Egyptian writing.

Chinese scripts. Like the Sumerian and Egyptian writing, Chinese scripts are of uncertain origin. The earliest known inscriptions date back to approximately 1500 B. C., at which time the script contained both ideograms and phonetic signs. Although modified in its external forms, this transitional script is still used in China, thus giving it the longest life-span of any current writing system. Chinese writers continue to use the ancient custom of writing their script in vertical lines which proceed from top to bottom

and right to left. The invention of paper in 105 A. D. brought about many external changes in the script, but the basis of the writing system has changed little over the centuries. It is possible that Chinese writing may undergo sweeping changes in the near future, for it is difficult to continue using a transitional script of 8000 characters in a world where alphabetic writing is nearly universal.

Syllabic scripts. Phonetic writing is of two types, syllabic and alphabetic. The Near East has produced several syllabic scripts which are of particular interest since they might prove to be a preliminary step in the development of alphabetic writing. A syllabic script found at Byblos (in present-day Lebanon) has been put forward by at least one scholar as the prototype of the Alphabet.[5] But the problem of exact dating of inscriptions leaves this hypothesis yet to be proved. Another syllabic script, this one found on Cyprus, was in use during the period extending from 700 B. C. to the first century B. C. Consisting of forty-five symbols, the Cypriote script represents a considerable simplification over the analytic transitional scripts previously discussed. The third syllabary is the Persian cuneiform script which is nearly alphabetic in nature. Probably invented in the sixth century B. C., this script is an adaptation of the cuneiform writing system to an Indo-European language, a fact which proved to be important in finding the key to cuneiform writing. Persian cuneiform contained forty-one symbols which were written from left to right. Perhaps later discoveries and decipherments will indicate the relationships (if any exist) of these syllabaries to the early alphabetic systems.

IV. Alphabetic Writing

The basis of alphabetic writing is the concept of using one symbol to stand for each significant sound in a language. The origin of this idea is and has been the subject of much debate. Some textbooks attribute the idea to the Egyptians without substantiating the claim. Others give credit for the invention to various peoples such as the Phoenicians, the Sumerians, the Assyrians, the Greeks, and many others. Modern discoveries, decipherments, and dating techniques have thrown some light on the dispute.

Origin of the Alphabet. From the origin of the Alphabet to its adoption by the ancient Greeks, only a few historical facts are known, although the period extending from approximately 1200 B. C. to the present is fairly well documented. Scholars generally believe that the notion of an alphabetic script arose during a period of political turbulence in the Fertile Crescent, roughly coinciding with the rule of the Hyksos dynasty in Egypt (c. 1730-1580 B. C.). The area of Palestine and Syria appears to be the most probably place of origin of the Alphabet, and whatever man or men invented it seem certainly to have been familiar with most of the scripts then being used in the eastern Mediterranian countrie

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[5]Diringer, p. 107.

If it is true that the Alphabet was invented in Palestine or Syria, then we must face the question of the origins of the people who inhabited these lands. One prevalent theory is that in about the fourth millennium B. C., certain nomadic tribes called Semites invaded the Tigris-Euphrates Valley. Later migrations of these Semitic tribes moved further west to lands among which are the modern nations of Lebanon, Israel, and Syria. It is in the language of these Semitic tribes that the earliest readable inscription in a truly alphabetic script is found. The name given this script is the North-Semitic Alphabet; the probable date of the earliest inscription (found at Byblos) is the eleventh century B. C. Other findings, the Ugaritic cuneiform alphabet and the alphabetic script found in the Sinai Desert, seem to verify the existence of alphabetic scripts dating back to at least the sixteenth or seventeenth century B. C. An even earlier inscription (possibly dating back to the seventeenth or eighteenth century B. C.) has been found in Israel, but the small number of symbols (fourteen) makes it practically impossible to decipher completely. The exact relationships among these early writing systems are still being debated.

Development and spread of the Alphabet. The North-Semitic Alphabet consisted of twenty-two symbols which were written from right to left. The Canaanite branch of the North-Semitic Alphabet had two main divisions: the Early Hebrew script and the Phoenician. It is the Phoenician adaptation of the North-Semitic Alphabet which the ancient Greeks borrowed and adapted to their own language in approximately the ninth or tenth century B. C. Recent evidence now indicates that the Mycenaean Greeks used a transitional script as early as 1400 B. C. on the island of Crete. Deciphered in 1952 by Michael Ventris, this early Greek writing system (called Mycenaean Linear B) is now the oldest known Greek writing in existence. Between the Linear B script and the earliest Greek writing in the Semitic alphabet lies a period for which no evidence of any writing has been discovered.

The Greek alphabet. The Semitic alphabet used by the Phoenicians was altered considerably by the Greeks when they adapted the script to their own language. Following the custom of the Phoenicians, the Greeks wrote their script from right to left, usually proceeding from top to bottom. Later, during the sixth century B. C., the Greeks used boustrophedon ("as the ox plows"), a type of writing which proceeds from right to left and left to right alternately. The Greeks adopted the present-day method of writing (left to right, top to bottom) in approximately 500 B. C., and this practice was followed by those who later borrowed the Greek alphabet.

One of the major changes which the Greeks devised was the transformation of five of the Semitic letters into symbols for the vowel sounds: alpha, epsilon, upsilon, iota, and omikron. The Semitic script did not record the vowel sounds; writers of the script simply assumed that the reader would provide the sounds in the proper places (ths s hw th sstm wld wrk). Another innovation of the Greeks

was the invention of symbols for sounds in their own language which were not found in the Semitic tongue (e.g., x, ph, ps, kh). Although several Greek alphabets came into existence, the Ionic script of Miletus was the one which finally emerged as the classical form of the Greek alphabet. A chart on the following page includes a few of the symbols.

The classical Greek alphabet had twenty-four letters, to which were later added the three marks of tone or pitch: acute, grave, and circumflex. Various forms or styles of this script developed (both cursive and print) as the writing system was adapted for the many types of writing surfaces such as stone, papyrus, parchment, and wax. The great importance of the Greek alphabet lies in the fact that it is the source of so many other writing systems.

V. Descendants of the Greek Alphabet

Etruscan script. It is the Greek alphabet that is the source of all Western alphabets. Very early in the history of Greek alphabetic writing (perhaps 700--800 B. C.), the Etruscans, a group of people who settled in northern Italy, adapted the Greek script to their own language. Owing largely to the lack of knowledge about the Etruscan language, this script is still undeciphered. Some scholars are convinced that the Etruscan script of twenty-six letters was probably the source from which the Romans borrowed twenty-one letters and three other symbols used for numbers. As the power of Rome expanded, the Etruscan language was replaced by Latin; the last Etruscan inscription is dated in the first century A. D.

Latin alphabet. Roman soldiers and priests can be credited with being the major instruments in spreading the Latin alphabet through what is now western Europe. However, the Slavic peoples of eastern Europe, who recognized the eastern branch of the Church, adopted other offshoots of the Greek alphabet called the Cyrillic and Glagolitic scripts. In these two instances, the common generalization regarding the close relationship between alphabets and religion seems to hold true. The spread of the Arabic script through much of Africa and the Near East by followers of Mohammed would seem to be another instance of this phenomenon.

In its final form, the Latin alphabet consisted of the following twenty-one letters: A B C D E F G H I K L M N O P Q P (the original shape of R) S T V X. In the first century B. C., the letters Z and Y were borrowed from the Greek to bring the total number of letters to twenty-three. It was this alphabet that was adapted to the Germanic language of those tribes which invaded and settled England after the departure of the Roman legions.

Early Germanic scripts. The earliest writings of any Germanic people are in a script which is called a "runic" alphabet. The name is derived from the Old English word run, which means "a secret, mystery." This alphabet, sometimes referred to as "futhork,"

Alphabetic Scripts

North-Semitic		Greek		Etruscan	Latin	Modern Caps
Early	Phoenician	Early	Classical	Early	Classical	Roman
K	𐤊	A	A	A	A	A
9	𐤁	B	B	B	B	B
1	1	1	Γ	1	C	C
D	𐤃	Δ	Δ	D	D	D

originated in approximately the first century B. C., but most of its early history is still uncertain. Since the Germanic tribes used the script sparingly, only a few early inscriptions have been discovered, the earliest dating back to the third century A. D. In the fourth century A. D., Wulfilas (or Ulfila), a bishop of the Visigoths, invented an alphabetic script which he adapted to his own Gothic language. This script consisted primarily of Greek letters, but included also a few Latin letters and two letters of uncertain origin. His translation of part of the Bible, preserved in later manuscripts, is especially important because it represents the earliest extensive writing in a Germanic language.

English writing. The Roman conquerors used the Latin writing system on the island of England during their four centuries of occupation, for a great number of inscriptions from this period have been discovered. After the withdrawal of the Roman armies, pagan Germanic tribes invaded and settled the greater part of the island during the fifth and sixth centuries A. D. The language which emerged from the blending of the dialects spoken by these Germanic tribes is what we call English today. The Latin alphabet was introduced to these tribes by both Irish missionaries and other missionaries who came directly from Rome. The script introduced by the Irish missionaries in the northern and western parts of the island was to become the common form of writing until the Norman Invasion.

As the Greeks had done with the Semitic alphabet, the Old English scribes did with the Latin script. Since the Latin alphabet had only five symbols for vowel sounds (A, E, I, O, U), two other vowel symbols were added: the digraph æ for the vowel sound in words like that, and the letter y for a high-front-rounded vowel sound (like modern French y). Other Latin letters were used to represent English sounds similar to those for which they stood in Latin. To represent the sound which is today spelled th, they used a runic letter (þ) called "thorn" and another letter (ð) called "eth," a crossed d. Another runic letter (ƿ) called "wen" was used to represent the consonantal sound of w.

During a later period, a letter (ȝ) called "yogh" was used in places where modern writers would use y; this same letter was also used to represent a sound very similar to German ch. Other writers represented this gutteral sound by the letter h. In the Middle English period, Latin and Norman French influence led to the dropping of the runic letters and substituting the digraphs th and gh. Another Middle English practice was to use both the v and the u in variant positions to represent both the consonant and the vowel sounds. The v was used at the beginnings of words (e. g., vttre) and the u was used elsewhere (e. g., eurich, schullen), practices which continued into the seventeenth century. The letter c, before e and i, stood for the common sound of s, as in city and cell. Old cw was replaced by the French qu in spelling words like queen and quick. Latin and French influence also led to the use of the "double u" (written vv at the beginning of

words) which later became written together to give us our modern letter w.

Modern English spelling. According to one well-known modern linguist, American English contains forty-five phonemes: twenty-four consonant sounds, nine vowels, four stresses, four pitches, and four junctures (or pauses).[6] To represent these forty-five phonemes (which are defined as "minimum units of distinctive sound feature"[7]), writers of English use forty-one symbols: twenty-six letters of the alphabet, eleven marks of punctuation, and five other features which include italics, small capitals, lower case letters, capital letters, and space.[8]

Although the situation described above would seem to indicate a lack of enough symbols, English spelling is not totally chaotic. Regular spelling patterns give readers and writers of English a complex, but nevertheless effective, set of clues to the pronunciation and spelling of a large number of English words. The irregular features of English spelling (e.g., "though the tough cough and hiccough plough me through") have been belabored often, but the positive side of the argument deserves consideration. Fries, in his book Linguistics and Reading, states that "most of that [English] spelling is patterned. It is basically phonemic in its representation, with patterns of letters, rather than single letters, as the functioning units of the representation."[9] For the reader of English, two of the most helpful patterns are found in those one-syllable words consisting of consonant-vowel-consonant and the same one-syllable words using the final e (e.g., can - cane, rat - rate). Spelling reform is certainly needed, but such a reform must be based upon a sound linguistic analysis of our language, not upon a list of "simplified spellings."

VI. Conclusion

The history of writing is especially significant because its development runs parallel to the growth of human culture. In the history of writing can be seen man's attempts to master his environment in preserving for future generations the records and wisdom of the past. Although earlier civilizations were content to attribute the invention ofwriting to gods of various sorts, we must use more scientific methods in exploring the origins and development of writing systems. Perhaps the complete history of writing will never be known; but the fact remains that the information we now possess about ancient and modern writing systems is essential to a full understanding of language.

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[6]W. Nelson Francis, The Structure of American English (New York, 1958), p. 128.

[7]Leonard Bloomfield, Language (New York, 1933), p. 79.

[8]Francis, p. 447.

[9]Charles C. Fries, Linguistics and Reading (New York, 1962), p. 169.

Although we have seen how the art of writing has developed from early pictographic scripts through ideographic and transitional systems to modern alphabetic writing, the reader should caution himself against a habit of thought which has often been called the "progressive fallacy" the notion that each script invented was better than the one before it, and finally the modern alphabet appeared as the inevitable and crowning development. It should be remembered that some scripts never got beyond the transitional stage and were often more elaborate and inefficient at the end of their development than at the beginning.

A pupil who understands the different bases of other writing systems will be more able to understand the problems he faces in writing English using an alphabetic script. The principle underlying alphabetic writing becomes clearer when it is seen in contrast with another writing system. The very least we can hope for is that the pupil who has studied different writing systems will take a more objective view of the task he faces in learning to write English.

VII. Annotated Bibliography

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VIII. Suggested Activities

A. Teaching methods

Since the purpose of this unit is to present the history of writing and to insure understanding of the alphabetic principle, much of the subject matter will necessarily be presented by means of lectures and silent reading. It may be advisable to divide the pupils' silent reading assignments into relatively short sessions (a maximum of 25 min.) which can be followed by discussion periods. During the discussion periods, the teacher can provide illustrative examples from his own knowledge or from material found in the teacher's version of the unit. The large body of historical facts to be presented will necessitate the use of supplementary materials to "liven up" the presentations. A detailed map of the Near East and Europe would be a valuable teaching aid.

1. Distinction between speech and writing. As a preliminary step, before attempting to distinguish between writing and speech, one or more of the following films might be shown in order to insure that pupils have adequate background in language study:

> Alphabet Conspiracy. "Dr. Baxter explains how babies speak a common 'language'--that is, the same speech sounds--until they grow older and establish speech patterns in their native languages; how languages came into being and developed; and how and why they possess both similarities and differences." 50 min., Pacific Telephone Co., 1959.
>
> Definition of Language. "Review the definition of language. Explains the relationship between language and culture. Discusses language patterns and how they affect the learning of a language. Dr. Henry Lee Smith, Jr. Professor of Linguistics and English, University of Buffalo." 30 min., Indiana Univ., 1957, ES 547
>
> The Alphabet. "Analyzes the English writing system and traces the origin, development and spread of the Alphabet. Shows and explains various writing systems including Sanskrit, Chinese, and Arabic. Discusses the significance of hieroglyphics in the development of written language." Dr. Henry Lee Smith, Jr. 30 min., Indiana University, 1957. ES 555

Following the film (or films) you might attempt to explain the distinction between writing and speech. It may be necessary to illustrate this point in several different ways to insure understanding.

2. Origins of writing. After the pupils understand what writing is, you should explain that the origins of the art of writing, like those of language itself, are unknown. The pupils will almost certainly have read or heard fanciful accounts of how writing began, and these "fairy tales" will have to be questioned. The distinction between true (conscious) writing and early cave drawings (embryo-

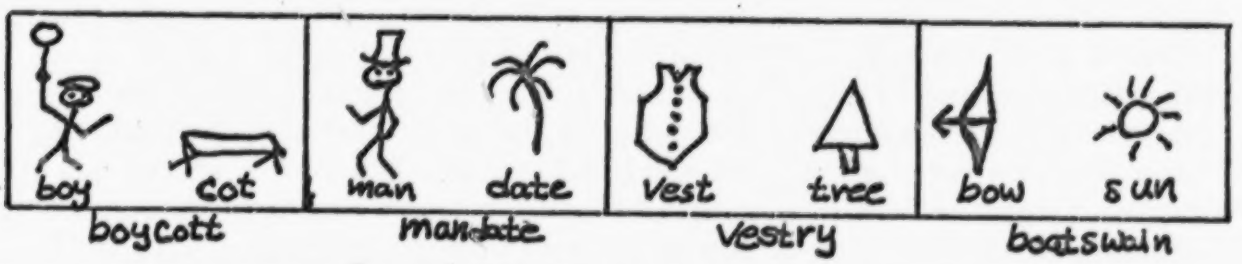
writing) should be developed next. A few of the primitive means of communication (e. g., memory-aids, codes, tokens) should be discussed and compared with the art of real writing.

3. Types of scripts. Before approaching the history of writing, the pupils must thoroughly understand the classification of scripts used in this unit. This part of the unit is just as important as the history, since it involves understanding the different bases used in other writing systems. Important aspects of each type of writing are reviewed below:

a. Picture writing differs from the embryo-writing mentioned above in that the former systematically uses pictures of objects and actions to tell a story or convey an idea. The pictures in embryo-writing are used in an arbitrary and haphazard way. Picture writing indicates a consciousness of language in the arrangement of the signs--that is, the pictograms are arranged in approximately the same order that the writer might have used when telling the story in person. Since there is no necessary connection between the pictograms and the writer's spoken language, this type of writing can be read in any language. A simple illustration of picture writing follows:

b. Ideographic writing is closely related to picture writing. The pictures are less realistic--simpler and more conventionalized --and the meanings of the ideograms have broadened to include related concepts, not just the object that is pictured. Carefully drawn figures found in picture writing (e. g., man - or hand -) might become simplified drawings like the following: man - , hand - . The earliest representations of the sun may have looked like this ( ); the later figure might have looked like this ( ); and an even later figure might look like the following ( ). The simplified signs (ideograms) might refer not only to the sun itself, but also to the idea of light, heat, day, or a sun-god. The particular advantage of the ideograms is that they can convey more complex and subtle ideas. Explain to the pupils that ideographic writing probably developed out of early picture writing and, like the latter, it can be read in any language.

c. Analytic transitional scripts have already been illustrated in the sections dealing with Egyptian and Sumerian writing. The main point to stress is that transitional scripts contain both ideograms and signs which stand for sounds in the writer's language. In other words, transitional scripts have become, in part, a representation of speech itself. How this first occurred, we may never know. But some of the ideograms may have become associated with certain sounds, and writers began to use the old ideogram to stand for those sounds rather than for the object which it formerly signified. Phonetic writing of this type is much like the puzzle which we call a rebus. By picturing certain objects or actions whose names contain the sounds which are desired, the name of another object or action is suggested to the reader. Several examples follow:



The analytic transitional scripts contain both ideograms (e.g., stands for ox, represents sun or day) and phonograms (signs representing sounds in the language being written) which are combined in several ways.

d. Phonetic writing can be syllabic or alphabetic in nature. Pure phonetic writing is a visual representation of speech. Unlike picture writing and pure ideographic writing, phonetic writing can be read only in the language used by the writer. Thus Persian cuneiform writing can be read only in the Persian language of the period in which the script was used.

Syllabic writing is based upon the principle that each of the syllables in a language can be represented by a single sign. Examples from an ancient Cypriote syllabary illustrate this type of phonetic writing:

(Examples from ancient Cypriote syllabary adapted from Diringer, Figure 22, "Cypriote Syllabary," Writing, New York 1962, published by Fredrick A. Praeger, Inc., p. 109.)

Such a writing system is ideal for a language which has relatively few syllable types, but it would be unsuited to languages which contain numerous syllable types consisting of two or more consonant sounds. In a word such as fifths, each consonant sound would have to be represented by a separate symbol, even though the sounds are spoken together as one syllable. A language like Japanese is ideally

suited to syllabic writing since it contains a limited number of syllable types, all of which are open (i. e., syllables consisting of a single consonant followed by a single vowel). The teacher might illustrate syllabic writing using the above symbols from the Cypriote syllabary (e. g., kana - , kono -).

Alphabetic writing is a type of phonetic script which the pupil must understand thoroughly, since our own English writing system is alphabetic. The advantages inherent in a system which represents each distinctive sound in a language by a single unchanging symbol should be made clear to every pupil. For example, using only a few different signs, we can write the names of numerous objects and actions: pan, man, can, tan, ran, ban, fan, plan, scan. If it were necessary to draw a separate sign for each of these objects or actions, the total number of symbols needed to communicate in writing would be extremely large. In writing the English language, the advantages of an alphabetic script over a syllabic script can also be easily demonstrated. The total number of distinct syllable types in our language is far greater than the total number of distinctive sounds. Each vowel sound can combine with numerous consonant sounds in a great number of different ways. To have a separate symbol for every syllable in the English language would require many times the number of symbols we now use.

The pupils should be shown that modern English writing does not exactly (or sometimes even closely) fit the sounds of the language. In English spelling, certain letters represent more than one sound and, conversely, certain sounds are represented by more than one symbol. Several examples follow:

Sound	Written Symbols	Written Symbol	Sounds
/k/	c, k, ck	s	sit, rise, sure, measure
/t/	t, tt, ed	g	get, gin, rouge
/d/	d, dd, ed	u	tune, unit, fun
/z/	z, zz, s	c	cite, cute
/u/	u, oo	x	lexical, exist, xylophone

4. Approaches to the history of writing. Writing touches the lives of every pupil every day, but few pupils have even a limited knowledge of its history. A knowledge of the bases which underlie the various writing systems should make the history of writing more understandable for pupils. The generous use of illustrations and examples should also serve to increase pupil interest. In presenting the history of writing to your class, you might try one of the following approaches:

a. Tell the story of writing in your own words, using the teacher and student units only as guides or as sources of illustrative material.

b. Have the pupils read each section of the student version, and then follow each silent reading session with explanations of difficult concepts, illustrations of various writing systems, and discussions of the material which has been covered.

5. History of writing. Regardless of the type of approach used in presenting the history of writing, the following key points should be stressed:

a. The origins of the earliest writing systems are as yet unknown. There is no evidence which connects the early cave drawings with any of the known systems of writing.

b. The two earliest known scripts, Egyptian hieroglyphic and Sumerian cuneiform, are classified as transitional scripts (i. e., those containing both ideographic and phonetic elements). Chinese writing is an example of a transitional script which is still in use today.

c. Not all writing systems eventually develop into phonetic (syllabic or alphabetic) scripts. Some types of writing simply ceased to be used, some developed into more or less phonetic scripts, and some (notably the Egyptian) never changed basically during their span of existence.

d. The Sumerian cuneiform writing is the earliest complete writing system known to modern scholars. It antedates the earliest Egyptian writing by a few hundred years.

e. Most of what we know about early writing systems has been discovered since 1800. Many ancient scripts (e. g., Etruscan, Mayan) have not yet been deciphered.

f. The origin of the Alphabet is still uncertain, but recent discoveries have strengthened certain hypotheses. The latest theories favor the Near East (Palestine and Syria) as the place of origin; the Semitic tribes (early Canaanites) are often given credit as the inventors of the idea. Egyptian writing, as well as the numerous other scripts in use at the time, influenced the inventors of the Alphabet, especially with respect to the shapes of certain letters. The most probable time for the invention of the Alphabet is the period extending from 1730 to 1580 B. C.

g. The history of the Alphabet from 1200 B. C. to the present is fairly clear. The ancient Greeks borrowed an alphabetic script from the Phoenicians who had earlier adapted the North-Semitic alphabet to their own language.

h. It is the Greek version of the Alphabet (borrowed from

the Phoenicians in the ninth or tenth century B. C.) which is the source of all Western alphabets, including our own.

i. The Latin alphabet was probably borrowed from the Etruscans who had borrowed the script from the Greeks in approximately 800-700 B. C.

j. The Latin alphabet was introduced on the island of England in the years following the invasion and settlement of England by Germanic tribes from northern Europe. The script which was adapted by scribes to the language of these invaders has developed into our present-day English alphabet.

k. These Germanic tribes had earlier used a "runic" alphabet for inscriptions, but not extensively. The sources of the runic alphabet are uncertain.

l. The early adaptation of the Latin script to English language resulted in a rather close fit between the writing system and the sounds of the language, but later sound changes and word borrowings have produced numerous irregularities in English spelling. Despite the irregularities, English spelling is not without a number of consistent patterns.

m. The English alphabet has frequently been modified during its span of existence (e. g., loss or addition of some letters, change in writing styles--Irish, French, Italian, etc), the principle upon which it is based has never changed. A perfect alphabetic script would have a single unchanging symbol for every distinctive sound in the language. Few writing systems in common use today approach a perfect application of this principle, with the possible exception of the special scripts used by professional linguists.

B. Exercises

You should select one or more of the following exercises to give the pupils an opportunity to strengthen their understanding of the various bases which underlie all known systems of writing.

1. Ask the pupils to prepare an original illustration of each of the different types of writing. For example, the pupil could use picto-graphic and ideographic scripts to convey a simple message to a savage who knew no English. Another pupil might invent a syllabic script which could be applied to simple English words. The best work produced by the pupils could be written on the chalkboard.

2. Ask the pupils to list the various sounds which each of the twenty-six letters of the English alphabet are used to represent. This could be done by listing, next to each letter, words in which that letter stands for a different sound. Most letters will have several different values.

3. Using the phonemic alphabet (found in the student version)

which was introduced in grade seven, list the distinctive sounds of English and ask the pupils to list the various ways each particular sound is spelled in American English. See page 18 of this unit for a partial list.

4. Ask the pupils to experiment with new arrangements of their own English writing system. For example, they might try writing it from right to left or from bottom to top. Or it can be written in lines which alternate direction with each line, as in boustrophedon. An example follows:

C. Related assignments in composition and speech.

Since the purpose of the unit is to transmit to the pupils a group of facts and principles relating to the art of writing, it would seem reasonable to expect them to use this knowledge in writing answers to pertinent questions. The following list of questions could be given at the end of the unit. You may wish to write your own set of questions covering the material in the unit.

1. What is writing? Define it.

2. Where did the art of writing originate? Who first invented it?

3. What is an alphabet? What basic principle is the alphabet founded upon?

4. Who invented the Alphabet? When and where did this happen?

5. How does the writing system of the ancient Egyptians differ from our own English writing system?

6. How do you account for your own difficulties in spelling English words?

7. Make a list of all the signs (symbols) which you use in writing English.

D. Answers for exercises in Student Version.

Exercise 1, page 3

a. True
b. False (Writing is a much more recent invention than speech.)
c. True (Letters stand for sounds, sounds stand for meanings of various kinds.)
d. True (Only since 1877 have we been able to record human speech sounds.)
e. False (Primitive cave drawings did not use the picture symbols in any systematic way that would indicate a consciousness of spoken language.)

Exercise 2, page 5

1. a. In picture writing, each sign stands for the object or action that is pictured.
   b. In ideographic writing, each sign stands for the object or action that is pictured (in a simplified and conventionalized way) or other related ideas.
   c. In phonetic writing, each sign stands for one or more sounds in the language being written.
   d. In phonetic writing, each combination of letters which is called a word stands for the sounds in the spoken name of the object, action, or idea.

2. Items c and d, ideographic and picture writing, are the correct choices.

3. The teacher is advised to refer to the unit on the sounds of English, Grade 7, for a detailed treatment of the special alphabet which is listed on page 6 of the student unit. The words in item no. 3 are written correctly as follows:

   a. flat - /flæt/
   b. shape - /šēp/
   c. tempt - /temt/
   d. chick - /čik/
   e. not - /nat/
   f. thought - /θot/
   g. black - blæk/
   h. thrill - /θril/

4. Answers will vary, but the following words are possible answers:

   a. character - Charles, itch, chantey
   b. that - with, thin
   c. get - ginger, rouge
   d. cycle - clinic

e. tape - tap, father, sofa

f. net - predict, kite

Exercise 3, page 17

The proper chronological order of events is as follows:

h, f, i, b, e, d, j, c, k, a , g.